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| 10/044,207 | 01/11/2002 | Shankar Moni | 14531.134 | 6034 |

| | | | EXAMINER |
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| 47973 | 7590 | 04/04/2005 | TALAPATRA, ANIKA F |

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Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _11 January 2002_.

2a)☐ This action is **FINAL**.      2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-59_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-59_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement. ·

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _11 January 2002_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All    b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _1/11/2002_.   4-12-07

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

## DETAILED ACTION

### *Information Disclosure Statement*

1.    The information disclosure statement (IDS) submitted on 11 January 2002 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Claim Objections*

2.    Claim 49 objected to because of the following informalities:  Claim 49 states, "...as defined in claim 49..." This is incorrect. Claim 49 cannot be dependent on claim 49. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.      Claims 1-59 rejected under 35 U.S.C. 102(e) as being anticipated by
Panusopone et al. (U.S. Patent 6647061) (hereafter referred to as Panusopone).

As to claims 1, 19, 39, and 58, Panusopone teaches a system, method,
transcoder, and program for transcoding an incoming video stream to reduce the bit rate
of the video stream, comprising: decoding the incoming video stream, wherein
parameters of the incoming stream are extracted from it and used in generating a new
video stream (column 6, line 23- column 7, line 31; tables 2-6; figure 3); spatially
reducing images of the incoming stream by a selected factor (column 4, lines 44-61;
column 15, line 64- column 16, line 19; column 18 line 35- column 19, line 7);
generating a new video stream that includes spatially reduced images using one or
more of the parameters extracted (column 18, line 35- column 21, line 6), wherein less
than all of the parameters of the incoming video stream are recomputed for the new
video stream (column 4, lines 29-61; tables 2-6).

As to claim 2, Panusopone teaches a system for transcoding an incoming video
stream to reduce the bit rate of the video stream, the system comprising: spatially
reducing images of the incoming video stream by a selected factor further comprises re-
sampling the incoming video stream after is has been decoded (column 4, lines 44-61;
column 15, line 64- column 18, line 34).

As to claims 3, 20, 38, and 40, Panusopone teaches a system, method, and
program for transcoding an incoming video stream to reduce the bit rate of the video
stream, comprising at least one of: scaling f_codes of the incoming video stream as the
f_codes is decoded, and scaling the f_codes of the incoming video stream after
decoding an entire picture of the video stream (column 18 line 35- column 21, line 6;
tables 2-6; figure 5).

As to claims 4, 22, and 41, Panusopone teaches a system, method, and program
for transcoding an incoming video stream to reduce the bit rate of the video stream,
comprising: generating a new video stream further comprises determining a macroblock
(MB) type for each MB of the new video stream (column 6, line 59- column 7, line 5;

column 7, lines 52-59; column 15, lines 42-63; column 17, line 56- column 18,line 34; column 19, line 29- column 20, line 64; table 5).

As to claims 5, 23, and 42, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining a MB type for each MB of the incoming video stream that maps to a particular MB of the new video stream, wherein the MB type of the MBs from the incoming video stream are included in the parameters of the incoming video stream (table 5); weighting each MB type of the MBs in the incoming video stream according to their contribution to the particular MB of the new video stream ; and taking a mean of the MB types from the incoming video stream, and rounding the mean (column 15, lines 42-63), wherein the rounded mean determines the MB type for the particular MB of the new video stream (column 6, line 59- column 7, line 5; column 7, lines 52-59; column 15, lines 42-63; column 17, line 56- column 18,line 34; column 19, line 29- column 20, line 64; table 5).

As to claims 6, 24, and 43, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining other flags associated with the MB type (column 15, lines 42-63; column 17, line 56- column 18,line 34; column 19, line 29- column 20, line 64; tables 2-6).

As to claims 7, 25, and 44, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: the flags comprise a quant flag, a forward flag, a backward flag, and a pattern flag (column 14, lines 27-37; table 4, Vop_quant, Vop_fcode_forward, Vop_fcode_backward).

As to claim 21, Panusopone teaches a method for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining other flags associated with the MB type (column 15, lines 42-63; column 17, line 56- column 18,line 34; column 19, line 29- column 20, line 64; tables 2-6). The flags comprise a quant flag, a forward flag, a backward flag, and a pattern flag (column 14, lines 27-37; table 4, Vop_quant, Vop_fcode_forward, Vop_fcode_backward).

As to claim 8, Panusopone teaches a system for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: generating a new video stream comprises selecting motion vectors for each picture that requires motion vectors (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; column 14, line 55- column 15, line 63; column 17, line 56- column 19, line 47; column 21, lines 28-33; table 5).

As to claims 9 and 26, Panusopone teaches a system and method for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining a value of the MVs from the MVs of the incoming video stream (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; column 14, line 55- column 15, line 63; column 17, line 56- column 19, line 47; column 21, lines 28-33; table 5).

As to claims 33, 45, and 52, Panusopone teaches a system and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: decoding the incoming video stream, wherein parameters of the incoming stream are extracted from it and used in generating a new video stream (column 6, line 23- column 7, line 31; tables 2-6; figure 3); spatially reducing images of the incoming stream by a selected factor (column 4, lines 44-61; column 15, line 64- column 16, line 19; column 18 line 35- column 19, line 7); generating new MVs for each MB of the new video stream that requires MVs using MVs from the incoming video stream (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; column 14, line 55- column 15, line 63; column 17, line 56- column 19, line 47; column 21, lines 28-33; table 5); determining MB type for each MB of the new video stream, wherein the MB type is a weighted mean rounded value determined from the MBs of the incoming video stream that map to a particular MB of the new video stream (column 6, line 59- column 7, line 5; column 7, lines 52-59; column 15, lines 42-63; column 17, line 56- column 18,line 34; column 19, line 29- column 20, line 64; table 5); generating a new video stream, using the new MV, new MB types, the stream parameters, that includes spatially reduced images using one or more of the parameters extracted (column 18, line 35- column 21,

line 6), wherein less than all of the parameters of the incoming video stream are recomputed for the new video stream (column 4, lines 29-61; tables 2-6).

As to claim 57, Panusopone teaches a system for transcoding an incoming video stream to reduce the bit rate of the video stream, the system comprising at least one of: scaling f_codes of the incoming video stream as the f_codes is decoded, and scaling the f_codes of the incoming video stream after decoding an entire picture of the video stream (column 18 line 35- column 21, line 6; tables 2-6; figure 5).

As to claims 10, 27, 34, 46, and 53, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining a value of the MVs from MVs of the incoming video stream further comprises determining a weighted mean scale value of the MVs from MVs of the incoming video stream that map to a particular MB of the new video stream (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; column 14, line 55- column 15, line 63; column 17, line 56- column 19, line 47; column 21, lines 28-33; table 5).

As to claims 11, 28, 35, 47, and 54, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: selecting candidate MVs for a particular MB of the new video stream, wherein the candidate MVs comprise scaled MVs from the incoming video stream and a weighted men scaled vector; and determining a best MV from the candidate MVs, wherein the best MV provides a best fit to the data (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; column 14, line 55- column 15, line 63; column 17, line 56- column 19, line 47; column 21, lines 28-33; table 5).

As to claims 12, 29, 36, 48, and 55, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising:

As to claim 13, Panusopone teaches a system for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: selecting weighted mean scaled MVs; selecting scaled MVs of the incoming video stream; and selecting field vectors (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; column 14,

line 55- column 15, line 63; column 16, line 20- column 20, line 64; column 21, lines 28-33; figure 6; table 6).

As to claim 14, Panusopone teaches a system for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: generating a new video stream further comprises determining flags of the new video stream from the flags of the incoming video stream (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; column 14, line 55- column 15, line 63; column 17, line 56- column 19, line 47; column 21, lines 28-33; table 5).

As to claims 15, 30, and 49, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining flags of the new video stream from flags of the incoming video stream further comprises determining a Discrete Cosine Transform (DCT) type flag using a weighted mean rounded procedure (column 3, lines 56-64; column 4, lines 43-61; column 6, line 23-68; column 7, lines 53-68; column 13, line 33-38; column 16, line 20- column 17, line 55; column 19, line 47- column 20, line 64; table 6).

As to claim 16, Panusopone teaches a system for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: generating a new video stream further comprises determining a quantizer scale of the new video stream using a quantizer scale of the incoming video stream (column 5, lines 5-20; column 6, lines 59-68; column 7, lines 33-68; column 13, line 44- column 14, line 54; column 19, lines 41-50; figure1; figure5; table 3).

As to claims 17, 31, and 50, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining a quantizer scale of the new video stream using a quantizer scale of the incoming video stream further comprises determining a quantizer scale using one of: a weighted mean rounded procedure; a weighted max rounded procedure; a weighted min rounded procedure; a weighted median rounded procedure (column 5, lines 5-20; column 6, lines 59-68; column 7, lines 33-68; column 13, line 44-column 14, line 54; column 19, lines 41-50; figure1; figure5; table 3).

As to claims 18, 32, and 51, Panusopone teaches a system, method, and program for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining a coded block pattern (column 14, lines 27-37).

As to claims 37 and 56, Panusopone teaches a system for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: determining flags of the new video stream from flags of the incoming video stream further comprises determining a Discrete Cosine Transform (DCT) type flag using a weighted mean rounded procedure (column 3, lines 56-64; column 4, lines 43-61; column 6, line 23-68; column 7, lines 53-68; column 13, line 33-38; column 16, line 20-column 17, line 55; column 19, line 47- column 20, line 64; table 6). Panusopone teaches generating a new video stream further comprises determining a quantizer scale of the new video stream using a quantizer scale of the incoming video stream (column 5, lines 5-20; column 6, lines 59-68; column 7, lines 33-68; column 13, line 44- column 14, line 54; column 19, lines 41-50; figure1; figure5; table 3). Panusopone teaches determining a coded block pattern (column 14, lines 27-37).

As to claim 59, Panusopone teaches a transcoder for transcoding an incoming video stream to reduce the bit rate of the video stream, comprising: the stream parameters comprise one or more of: f_codes (column 18 line 35- column 21, line 6; tables 2-6); MVs (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; table 5); MB type (column 6, line 59- column 7, line 5; column 7, lines 52-59); motion type (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; table 5); motion vertical field select (table 5); forward prediction type (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; table 5); backward prediction type (column 4, lines 27-61; column 6, lines 1-21; column 8, lines 38-47; table 5); DCT type (column 6, line 23-68; column 7, lines 53-680; quantizer scale (column 6, lines 59-68; column 7, lines 33-68); coded block pattern (column 14, lines 27-37); and DCT coefficients (column 6, line 23-68; column 7, lines 53-68).

## Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.      Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Panusopone, further in view of Wee et al. (Secure Scalable Streaming Enabling Transcoding Without Decryption. IEEE International Conference on Image Processing. October 2001) (hereafter referred to as Wee). Panusopone teaches a system for transcoding an incoming video stream to reduce the bit rate of the video stream. Panusopone does not teach performing fine grain motion estimation for the MVs. Wee teaches fine-grain bitrate reduction (Wee, 4.3). It is well known in the art at the time of the invention to use fine grain bitrate reduction in order to achieve higher quality video stream transcoding. Therefore, it would be obvious to one of ordinary skill in the art to use fine grain bitrate reduction in the system taught by Panusopone, in order to achieve higher quality video stream transcoding.

## Conclusion

5.      The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

    i. U.S. Patent 6577679, Apostolopoulos: Apostolopoulos teaches a transcoder for
transcoding an incoming video stream to reduce the bit rate of the video stream,
comprising generating new parameters for generating a new video stream
(Apostolopoulos, Summary of the Invention).

    ii. U.S. Patent 6671322, Vetro et al.: Vetro teaches a transcoder for transcoding
an incoming video stream to reduce the bit rate of the video stream, comprising spatial
resolution reduction; and generating new parameters for generating a new video
stream, including motion vectors and DCT coefficients (Vetro, Summary of the
Invention).

    Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Anika Talapatra whose telephone number is 571-272-
6039. The examiner can normally be reached on Monday to Friday, 08:00-16:30.

    If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone
number for the organization where this application or proceeding is assigned is 703-
872-9306.

    Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

A.T.

KEVIN BURD
PRIMARY EXAMINER